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Errata

I N S E C T P E S T S U R V E Y

Special Supplement

October 1, 1943

The Collection, Emergence, and Release of Parasites
of the European Corn Borer, Season of 1943.

Page 3, Table 1. Releases in Wildcat Township, Tipton County,
Indiana, to read as follows:

June 24	L. grisescens	493
July 9	M. gifuensis	1,908
July 9	I. punctoria	482

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1884

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AGRICULTURAL RESEARCH ADMINISTRATION
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THE COLLECTION, EMERGENCE, AND RELEASE OF PARASITES
OF THE EUROPEAN CORN BORER, SEASON OF 1943

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Collections of overwintering corn borer larvae were made in three localities: Southeastern Massachusetts, central Connecticut, and Burlington County, N. J., between October 31, 1942, and March 10, 1943, to provide parasite material for colonization in 1943. The collections in Massachusetts were primarily to obtain the braconid Macrocentrus gifuensis Ashm.; in Connecticut, the ichneumonid Inareolata punctoria Roman; and in New Jersey, the tachinid Lydella grisescens R.D. The two New England localities had been utilized in previous years as sources of parasite material, but the New Jersey locality was used for the first time as a consequence of the very rapid increase of the introduced tachinid following its release there in 1939. A total of 30,700 overwintering borers were collected from the field and shipped for subsequent handling to the corn borer laboratory at Moorestown, N. J.

Field-collected material was held in cold storage at a temperature of 36° F. and 70 percent relative humidity from the time of collection until it was placed under developmental conditions. Contact water was supplied at monthly intervals during the cold-storage period. All overwintering borers from Massachusetts (10,200) and from Connecticut (12,500) were isolated in individual 2-inch shell vials, but the New Jersey material, consisting of 8,000 borers, was handled in bulk in corrugated-cardboard packets.

Parasite emergence was obtained in air-conditioned incubators and emergence chambers held at 80° F. and 70 percent relative humidity. Host material was given contact water at weekly intervals. Adult parasites were collected daily after time had been allowed for them to mate.

Because the release program provided for the liberation of the various parasites in widely separated States and in localities having one, two, and three generations of the borer annually, special consideration had to be given to the schedule for emergence in each locality, to provide adults of each species of parasite at the proper time to

synchronize releases with the presence of the borer in a stage suitable for parasite attack.

A total of 10,997 of the field-collected host larvae produced parasites. This gives an apparent average of 35.8 percent parasitization of the borers utilized as a source of parasite material. Actually, borer parasitization averaged somewhat higher than this, as a small number of the host larvae died during the emergence period before producing parasites.

The material having the highest parasitization was that from New Jersey, with 68.6 percent parasitization by the tachinid Lydella grisescens. Massachusetts material showed 25.8 percent parasitization by Macrocentrus gifuensis plus 8.2 percent by L. grisescens, or a total of approximately 34 percent. Connecticut material averaged 13 percent by Inareolata punctoria plus 3.1 percent by L. grisescens, or a total of approximately 16 percent. Each of the three collection localities produced essentially one parasite species only, although in some places small numbers of additional species were obtained.

A total of 2,644 cocoon masses of the polyembryonic Macrocentrus gifuensis were reared from the field-collected material. These cocoon masses produced 34,144 strong, healthy adult parasites, or an average of 12.9 per cocoon mass. Additional adults, estimated as approximately 8,000 specimens, emerged but were discarded as too weak to survive shipping and handling.

Parasite shipments were made by railway express to the more distant points and by automobile to release points conveniently reached by that means from the Moorestown laboratory. As in previous years, shipping containers utilized were the standard, cheesecloth-wrapped cans placed in insulated wooden boxes with pails of cracked ice.

Parasites shipped from the New Jersey laboratory to release points totaled 40,873. Mortality during shipment up to time of actual release in the field was only 3.6 percent--somewhat lower than the usual mortality of approximately 4 percent. Shipping mortality by species: Lydella grisescens 2.6 percent, Inareolata punctoria 3.0 percent, Macrocentrus gifuensis 3.7 percent.

Thirty-two liberations, totaling 39,418 adult parasites, were completed in 1943. Of these the greatest number, 32,732, were Macrocentrus gifuensis. Releases of Lydella grisescens totaled 5,162 adults, and the total for Inareolata punctoria was 1,524. Releases were made in 10 States in 1943, as itemized in table 1.

Table 1.--Liberations of parasites of the European corn borer in the United States in 1943

State and county	Township	Date of release	Species released	Adults released Number
Delaware:				
New Castle County ...	Pencader	June 16	L. grisescens	600
Illinois:				
Kankakee County	Saint Anne	June 25	do.	495
Do.....	do.	July 10	M. gifuensis	1,944
Vermilion County	Grant	June 24	L. grisescens	488
Do.....	do.	July 10	M. gifuensis	1,885
Do.....	do.	July 10	I. punctoria	494
Indiana:				
Clay County	Harrison	June 25	L. grisescens	486
Do.....	do.	July 10	M. gifuensis	1,941
Tipton County	Wildcat	June 24	do.	493
Do.....	do.	July 9	do.	1,908
Do.....	do.	July 9	I. punctoria	482
Maryland:				
Kent County	Chestertown	June 9	L. grisescens	214
Do.....	do.	July 12	M. gifuensis	1,967
Queen Annes County...	Centerville	July 12	do.	1,958
Talbot County.....	Easton	June 28	L. grisescens	599
Do.....	do.	July 12	M. gifuensis	1,973
New Jersey:				
Salem County.....	Piles Grove	July 8	L. grisescens	472
North Carolina:				
Camden County.....	Camden	May 31	do.	407
Do.....	do.	July 13	M. gifuensis	1,871
Ohio:				
Hamilton County.....	Colerain	June 24	L. grisescens	488
Do.....	do.	July 9	M. gifuensis	1,889
Pennsylvania:				
Perks County.....	Maiden Creek	July 6	do.	1,978
Chester County.....	Calm	July 6	do.	1,973
Delaware County.....	Middletown	July 6	do.	1,991
Lehigh County.....	Upper Macungie	July 6	do.	1,983
Northampton County....	Upper Nazareth	July 6	do.	1,965
York County.....	York	July 15	do.	1,793
Virginia:				
Princess Anne County..	Backbay	July 13	I. punctoria	171
Do.....	do.	July 13	M. gifuensis	1,924
Wisconsin:				
Sheboygan County.....	Wilson	July 11	do.	1,789
Do.....	do.	July 11	L. grisescens	420
Do.....	do.	July 11	I. punctoria	377
Total.....	--	--	--	39,418

